glance, these items seem either of little use or of little interest. One also has to believe that all the sciences are so interconnected that it is much easier to learn them all together than to separate one from the others. Therefore, if one seriously wants to investigate the truth of things, then one should not select some particular science, for they are all interconnected and interdependent.[8] Rather, one should simply think about increasing the natural light of reason,[9] not in order that one might solve this or that scholastic difficulty,[10] but in order that the intellect might show the will what has to be decided in the particular situations of life. Soon one will be amazed that one has made far greater progress than those who study particulars, as well as that one has achieved, not only all the things that the others desire, but also things higher than they could ever hope to expect.[11]

[8] Cf. the organic metaphor that Descartes employs in the Preface to the French Edition of the *Principles of Philosophy*, AT, IX/2, 14: 'Thus all of philosophy is like a tree [un arbre], of which the roots [les racines] are metaphysics, the trunk [le tronc] is physics, and the branches [les branches] that emerge from the trunk are all the other sciences, which may be reduced to three principal ones, to wit, medicine, mechanics, and morals … .'

[9] Descartes claims no 'criterion of truth' other than the natural light of reason (cf. AT, II, 597–598). The systematic attempt at an analogy between the sensible light of the sun and the intelligible light of the mind goes back at least to the metaphor of the sun in Plato, *The Republic*, 506 e 1 ff. (bk. VI). Many philosophers have viewed illumination – divine or other – as a necessary condition for intelligibility, including Plotinus (203/04–269/70) – see the *Enneads* – and Augustine (354–430) – see *De magistro*.

[10] 'Scholasticism', understood as the intellectual movement that dominated medieval Western civilization, is the enormously complicated fusion of Aristotelian-Greek philosophy and Judaeo-Christian theology anticipated or undertaken by, e.g., Anselm of Canterbury (1033/34–1109), Peter Abaelard (1079–1142), Alexander of Hales (ca. 1185–1245), Bonaventure (ca. 1221–1274), Albertus Magnus (1206/07–1280), Thomas Aquinas (1225–1274), Roger Bacon (ca. 1215–ca. 1292), John Duns Scotus (ca. 1266–1308), William of Ockham (ca. 1285–1349), etc. To be sure, Descartes had been educated in the late Scholastic tradition and thus exposed to the thought of such Thomists as Thomas de Vio Cajetan (1468–1534) and Francisco Suárez (1548–1617). None the less, his chief reaction to Scholasticism would be rebellion against it. Cf. *Discourse*, AT, VI, 5, 13, 34, 37, 43, 61, and 69, where virtually all the references to Scholastic philosophy – 'la philosophie qu'on enseigne dans les écoles' – are negative.

[11] On the formation of the *ingenium* cf. esp. Quintilian, *Institutio oratoria*, I, proem, 6, 12, 26–27, i, 1, 3, ii, 16, iii, 1–17, viii, 8, x, 34, xii, 2, 8, II, iv, 7, 14, 20, viii, 1–15, IV, v, 2, V, x, 101, VI, proem, 1, 7, i, 44, ii, 3, iv, 8, VII, i, 40, VIII, proem, 2, iii, 56, X, i, 40, 50, 62, 74, 80, 90, 98, 102, 109, 115, 117, 128, 130, ii, 12, 19–20, vi, 4, vii, 22, XII, i, 9–10, 25, viii, 1, x, 10, xi, 10, 26.

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# *Regula II*

## *De scientia et cognitione*

*Circa illa tantum objecta oportet versari, ad quorum certam et indubitatam cognitionem nostra ingenia videntur sufficere.*

1. Omnis scientia est cognitio certa et evidens; neque doctior est qui de multis dubitat, quam qui de iisdem nunquam cogitavit, sed nihilominus eodem videtur indoctior, si de aliquibus falsam concepit opinionem; ac proinde nunquam studere melius est, quam circa objecta adeo difficilia versari, ut vera a falsis distinguere non valentes dubia pro certis cogamur admittere, cum in illis non tanta sit spes augendi doctrinam, quantum est periculum minuendi. Atque ita per hanc propositionem rejicimus illas omnes probabiles tantum cognitiones, nec nisi perfecte cognitis, et de quibus dubitari non potest, statuimus esse credendum. Et quamvis valde paucas tales existere sibi fortasse persuadeant litterati, quia scilicet ad cognitiones tales, ut nimis faciles et unicuique obvias, communi quodam gentis humanae vitio reflectere neglexerunt: moneo tamen longe esse plures quam putant, atque tales sufficere ad innumeras propositiones certo demonstrandas, de quibus illi hactenus non nisi probabiliter disserere potuerunt; et quia[10] crediderunt indignum esse | homine litterato fateri aliquid se nescire, ita assuevere [363] commentitias suas rationes[11] adornare, ut sensim postea sibimetipsis persuaserint, atque ita illas pro veris venditarint.

2. Verum, si hanc regulam bene servemus, valde pauca occurrent, quibus addiscendis liceat incumbere. Vix enim ulla in scientiis quaestio est, de qua non saepe viri ingeniosi inter se dissenserint. Sed quotiescumque duorum de eadem re judicia in contrarias partes feruntur, certum est alterutrum saltem decipi, ac ne unus quidem videtur habere scientiam: si enim hujus ratio esset certa et evidens, ita illam alteri posset proponere, ut ejus etiam intellectum tandem convinceret. De omnibus ergo quae sunt ejusmodi probabiles opiniones, non perfectam scientiam videmur posse acquirere, quia de nobis ipsis plura sperare, quam caeteri praestiterunt, sine temeritate non licet; adeo ut, si bene calculum ponamus, solae supersint Arithmetica et Geometria ex scientiis jam inventis, ad quas hujus regulae observatio nos reducet.[12]

3. Neque tamen idcirco damnamus illam, quam caeteri hactenus invenerunt,[13] philosophandi rationem, et scholasticorum aptissima bellis probabilium syllogismorum

[10] H, AT, C, and SGZ: quia. A: qui.
[11] H, A, AT, and C: rationes. Missing in SGZ.
[12] H and SGZ: reducet. L (?), AT, and C: reducat. A: reducit.
[13] A, AT, C, and SGZ: invenerunt. H: ininerunt. L: iniverunt.

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# *Rule Two*

## *On Science and Knowledge*

*We should attend only to those objects for whose certain and indubitable cognition our natural intelligence seems to suffice.*

1. All knowledge is certain and evident cognition.[12] Someone who has doubts about many things is not more learned than someone else who has never thought about them; on the contrary, one seems less learned, regardless, if one has formed a false opinion about any of them. Hence it is even better never to study than to be occupied with objects so difficult that, being unable to distinguish true things from false ones, we are forced to admit doubtful things as certain, since in these matters the danger of decreasing knowledge is greater than the hope of increasing it. Thus, in accordance with this proposition,[13] we reject all that merely probable cognition and resolve that we are to believe nothing except those things which are perfectly known and about which it is impossible to have doubt. Although the learned may perhaps persuade themselves that there are very few such things – since, owing to a certain common vice of humankind, namely, they have disdained to reflect on such truths as all too facile and obvious to everyone –, I still insist that there are many more such truths than they think, and that these truths suffice for the certain demonstration of innumerable propositions with which they have so far been able to deal only probabilistically. Because they have believed it to be unworthy of a learned human being to admit to not knowing something, they have thus grown so accustomed to elaborating upon their fabricated arguments that, in the course of time, they have gradually persuaded themselves of them and have thus passed them off as true.

2. Yet, if we do follow this rule closely, then there will indeed be very few things in the learning of which we would be permitted to get involved. For there is hardly any question in the sciences about which ingenious human beings have not often disagreed among themselves. But, whenever two people make conflicting judgments on the same issue, it is certain that at least one of them is mistaken, and not even one of them seems to have knowledge. For, if the reasoning of the one person were certain and evident, then it would be able to be laid out to the other person in such a way that eventually the former would intellectually convince the latter too. Concerning all the matters that are probable opinions of this kind, therefore, we do not seem to be able to acquire perfect knowledge, since it would be reckless for us to hope for more than others have achieved. This is so much so, that, if we are reckoning correctly, then, of the sciences already found, there would remain arithmetic and geometry alone to which the observance of this rule will reduce us.

3. Yet we do not, on this account, condemn that manner of philosophizing which others have hitherto devised, nor the weapons of the scholastics, the probable

[12] This line can also be translated thus: 'All science is certain and evident knowledge.' The point is that 'scientia' is Descartes' term for systematically organized and apodictically founded knowledge. Readers are urged to use the index of this edition to decide how to translate Descartes' epistemic terminology.

[13] Descartes often refers to the rules of the *Rules* as 'propositions' – cf., e.g., R. 5, § 2, and R. 6, § 1.

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tormenta: quippe exercent puerorum ingenia, et cum quadam aemulatione promovent,
[364] quae longe melius est ejusmodi opinionibus informari, | etiamsi illas incertas esse appareat, cum inter eruditos sint controversae, quam si libera sibi ipsis relinquerentur. Fortasse enim ad praecipitia pergerent sine duce; sed quamdiu praeceptorum vestigiis insistent, licet a vero nonnunquam deflectant, certe tamen iter capessent, saltem hoc nomine magis securum, quod jam a prudentioribus fuerit probatum. Atque ipsimet gaudemus, nos etiam olim ita in scholis fuisse institutos; sed quia jam illo soluti sumus sacramento, quod ad verba Magistri nos adstringebat, et tandem aetate satis matura manum ferulae subduximus, si velimus serio nobis ipsis regulas proponere, quarum auxilio ad cognitionis humanae fastigium ascendamus, haec profecto inter primas est admittenda, quae cavet, ne otio abutamur, ut multi faciunt, quaecumque facilia sunt negligentes, et nonnisi in rebus arduis occupati, de quibus subtilissimas certe conjecturas et valde probabiles rationes ingeniose concinnant; sed post multos labores sero tandem animadvertunt, se dubiorum multitudinem tantum auxisse, nullam autem scientiam didicisse.

4. Nunc vero, quia paulo ante diximus ex disciplinis ab aliis cognitis solas Arithmeticam et Geometriam ab omni falsitatis vel incertitudinis vitio puras existere: ut diligentius rationem expendamus quare hoc ita sit, notandum est, duplici via nos ad
[365] cognitionem | rerum devenire, per experientiam scilicet, vel deductionem. Notandum insuper, experientias rerum saepe esse fallaces, deductionem vero sive illationem puram unius ab altero posse quidem omitti, si non videatur, sed nunquam male fieri ab intellectu vel minimum rationali. Et parum ad hoc prodesse mihi videntur illa Dialecticorum vincula, quibus rationem humanam regere se putant, etiamsi eadem aliis usibus aptissima

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syllogisms most fitting for controversies.[14] For these do exercise the natural intelligence of the young, and they do stimulate them with a certain rivalry; also, it is much better for their natural intelligence to be informed by opinions of this kind – even if they would appear to be uncertain, since they are controversial among the learned – than that the young were left entirely to themselves. For without guidance they might perhaps head toward precipices. But, so long as they follow in the footsteps of the teachers – although they may sometimes deviate from the truth –, they will surely still hold to a path that is more secure, at least in the sense that it will have already been tested by the more prudent. To be sure, we ourselves are very glad that we too have once been thus instructed in the schools;[15] none the less, we are now freed from the oath that bound us to the master's words, and, at a mature enough age, we have finally put distance between our hands and the rod.[16] Thus, if we should seriously want to propose for ourselves rules with whose assistance we might ascend to the heights of human knowledge, then, among the first ones which we must admit, is, in fact, that which warns us that we should not abuse our leisure, as many do in that they neglect all the easy tasks and get occupied only with the difficult matters, with respect to which they, admittedly, ingeniously construct most subtle conjectures and very probable arguments, however, after many efforts, finally realize, too late, that they have only increased the multitude of their doubts, yet not acquired any knowledge.

4. But now we have said, a short while ago,[17] that, of the disciplines known by others, arithmetic and geometry alone are free from any taint of falsity or of uncertainty. In order to consider the reason for this more carefully, one has to note that there are two ways by which we arrive at a knowledge of things, namely, through experience or through deduction.[18] In addition, one has to note that, while experiences[19] of things are often deceptive, a deduction, or a pure inference of one thing from another, can be omitted, of course, if it is not seen, but it can never be performed wrongly by an even minimally rational intellect.[20] Also, those chains of the dialecticians,[21] with which they think that they regulate human reason,[22] seem to me to be of

[14] 'Probable' are those syllogisms whose premisses are believed, but not known, to be true. Aristotle's *Topics* deals with such plausible arguments and how to make them. Cf. the next paragraph on dialectical reasoning. On syllogisms generally cf. R. 7, § 5, R. 10, § 5, R. 13, § 1, and R. 14, § 2.

[15] Descartes had studied at the Jesuit *Collège Royal* of La Flèche in Anjou from 1606 to 1614 and received a *baccalauréat* and a *licence en droit* at the University of Poitiers (November 9–10, 1616).

[16] Cf. *Discourse*, pt. I, passim.

[17] Cf. R. 2, § 2.

[18] Cf. R. 3, § 4.

[19] The meaning of the Latin expression 'experientia', like those of many others, can vary by context. Among other things, it can mean, on the one hand, about the same in that language as in English; more technically, it can signify, on the other hand, 'induction' (here, i.e., 'inductions about things'). Yet there is a veritable definition of the verbal form 'experiri' (to [learn by] experience) in R. 12, § 19.

[20] This is a remarkable claim. Cf. R. 3, §§ 4–5 and 8, and R. 12, § 21, as well as AT, VII, 157.

[21] Here Descartes may well mean the formal rules of valid reasoning – also viewed as providing 'direction for the mind' (*directio ingenii*) – as set forth in the Scholastic logic manuals which, in accordance with the Jesuits' *Ratio studiorum* (*Order of Studies*), were standard textbooks for their schools in the late sixteenth and early seventeenth centuries. Cf., e.g., the *Introductio in dialecticam Aristotelis* (1561) of Francisco Toledo (1532–1596), the *Institutionum dialecticarum libri octo* (1564) of Pedro Fonseca (1528–1599), etc. Cf. also § 3 of this rule with its unambiguous statement of relevant first-hand knowledge.

[22] Here the Latin – 'quibus rationem humanam regere se putant' – is verbatim that of R. 10, § 4.

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